

CLAIMS

1. An optical collimator comprising:

a sleeve having an inner hole aligned concentrically with an outer surface of the sleeve;

a partially spherical lens having a columnar portion fixed into the inner hole of the sleeve and translucent spherical surfaces at both ends of the columnar portion, an optical axis of the translucent spherical surfaces being positioned eccentrically with respect to a center axis of the outer surface of the sleeve; and

a capillary tube fixed into the inner hole of the sleeve, holding an optical fiber at a position decentered with respect to the center axis of the outer surface of the sleeve, in a state of an angled end face of the optical fiber facing to the partially spherical lens.

2. An optical collimator according to claim 1, wherein an optical axis of collimated beam outgoing from an outer one of the translucent spherical surfaces of the partially spherical lens is in a round with radius range of 0.02 mm or less, the center of the round being the center axis of the outer surface of the sleeve, and in an angle range of 0.2° or less with respect to the center axis of the outer surface of the sleeve.

3. An optical collimator according to claim 1, wherein, when one pair of the optical collimators are arranged to oppose each other at positions, at which a working distance thereof is secured, and under a state, in which the center axes of the outer surfaces of the sleeves coincide with each other, and when optical signal is introduced from the optical fiber of the optical collimator on one side, an optical signal response of -30 dB or more is obtained from the optical fiber of the optical collimator on the other side.

4. An optical collimator according to claim 1, wherein the sleeve is made of one of glass and crystallized glass.

5. An optical collimator according to claim 1, wherein the sleeve is a split sleeve.

6. An optical collimator according to claim 1, wherein the capillary tube is made of one of glass and crystallized glass.

7. An optical collimator according to claim 1, wherein differences in thermal expansion coefficient among the sleeve, the partially spherical lens, and the capillary tube is within $50 \times 10^{-7} / \text{K}$.

8. An optical collimator according to claim 1, wherein the

capillary tube is produced through a drawing process.